



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: SERGE BELLET, et al.

International Application No.: PCT/FR 00/01852

International Filing Date: June 30, 2000 Priority Date Claimed: July 7, 1999

For: Method and device for stream cracking of hydrocarbons

Attorney Docket No.: U 013762-9

Box PCT

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

PRELIMINARY AMENDMENT

Please amend the above application as follows.

IN THE CLAIMS

4. (Amended) A method according to claim 1, characterized in that the mechanical work is produced by a heat engine, a gas engine, or preferably a gas turbine.

5. (Amended) A method according to claim 1, characterized in that the cogeneration produces heat energy in the form of hot combustion gases at a temperature lying in the range 400°C to 570°C, and preferably in the range 470°C to 550°C.

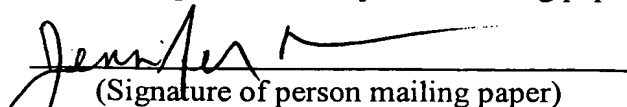
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CERTIFICATE UNDER 37 CFR 1.10

I hereby certify that this paper is being deposited with the United States Postal Service on this date December 11, 2001 in an envelope as "EXPRESS MAIL POST OFFICE TO ADDRESSEE" Mailing Label Number EV011019612US addressed to the: Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231

JENNIFER RASHKIN

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6. (Amended) A method according to claim 1, characterized in that the cogeneration produces the heat energy in the form of hot combustion gases, with a fraction of the oxygen thereof being used as oxidizer for performing post-combustion and increasing the heat energy used for preheating the mixture to be cracked.

9. (Amended) A method according to claim 1, characterized in that electrical heating is performed by induction heating.

11. (Amended) A method according to claim 1, characterized in that the electrical heating is performed by the Joule effect.

13. (Amended) A method according to claim 1, characterized in that ultrasound waves are applied to the mixture of hydrocarbons and steam during cracking.

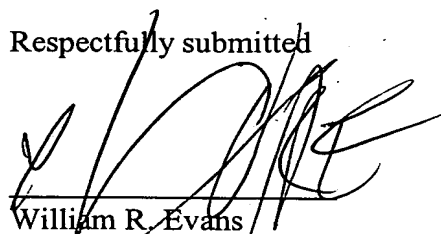
19. (Amended) Apparatus according to claim 15, characterized in that it comprises at least one post-combustion chamber (10) placed on at least one of the lines (9) for evacuating combustion gases from the gas turbine (1) and fed by a fuel feed line.

20. (Amended) Apparatus according to claim 15, characterized in that the zone (17) for separating and purifying the cracked hydrocarbons comprises at least one drawing-off line (19) for drawing off at least one cracked hydrocarbon, and in that said drawing-off line (19) has at least one recovery line (5) running therefrom for recovering at least one cracked hydrocarbon and connected to at least one of the lines (3) for feeding fuel to the gas turbine (1).

REMARKS

The above amendatory action is taken solely for the purpose of avoiding claim fees that would otherwise accrue due to the presence of multiple dependent claims.

Respectfully submitted

A handwritten signature in black ink, appearing to read 'W. R. Evans', is written over a horizontal line.

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4. (Amended) A method according to [any one of claims] claim 1 [to 3], characterized in that the mechanical work is produced by a heat engine, a gas engine, or preferably a gas turbine.
5. (Amended) A method according to [any one of claims] claim 1 [to 4], characterized in that the cogeneration produces heat energy in the form of hot combustion gases at a temperature lying in the range 400°C to 570°C, and preferably in the range 470°C to 550°C.
6. (Amended) A method according to [any one of claims] claim 1 [to 5], characterized in that the cogeneration produces the heat energy in the form of hot combustion gases, with a fraction of the oxygen thereof being used as oxidizer for performing post-combustion and increasing the heat energy used for preheating the mixture to be cracked.
9. (Amended) A method according to [any one of claims] claim 1 [to 8], characterized in that electrical heating is performed by induction heating.
11. (Amended) A method according to [any one of claims] claim 1 [to 8], characterized in that the electrical heating is performed by the Joule effect.
13. (Amended) A method according to [any one of claims] claim 1 [to 12], characterized in that ultrasound waves are applied to the mixture of hydrocarbons and steam during cracking.
19. (Amended) Apparatus according to [any one of claims] claim 15 [to 18], characterized in that it comprises at least one post-combustion chamber (10) placed on at least one of the lines (9) for evacuating combustion gases from the gas turbine (1) and fed by a fuel feed line.
20. (Amended) Apparatus according to [any one of claims] claim 15 [to 19], characterized in that the zone (17) for separating and purifying the cracked hydrocarbons comprises at least one drawing-off line (19) for drawing off at least one cracked hydrocarbon, and in that said drawing-off line (19) has at least one recovery line (5) running therefrom for recovering at least one cracked hydrocarbon and connected to at least one of the lines (3) for feeding fuel to the gas turbine (1).



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December 11, 2001

IN RE: SERGE BELLET, et al.

INTERNATIONAL APPLICATION NO.: PCT/FR00/01852

INTERNATIONAL FILING: 30 JUNE 2000

PRIORITY: DATE: 7 JULY 1999

FOR: METHOD AND DEVICE FOR STEAM CRACKING OF HYDROCARBONS

TRANSMITTAL LETTER TO THE UNITED STATES ELECTED OFFICE (EO/US) (ENTRY INTO U.S. NATIONAL PHASE UNDER CHAPTER II) (DUPLICATE): COPY OF ENGLISH TRANSLATION INCLUDING DECLARATION: PRELIMINARY AMENDMENT: COPY OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT: COPY OF REQUEST: COPY OF INTERNATIONAL PUBLICATION NO.: WO 01/04236: COPY OF FORM PCT/IPEA/416: PCT/IB/308: INFORMATION DISCLOSURE STATEMENT: INTERNATIONAL SEARCH REPORT" FORM PTO-1449: REFERENCES \$908.00 (FILING FEE) (CHECK ENCLOSED)

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*Including Claim Fee*

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CHAPTER II

WRE/jr

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